



## SEQUENCE LISTING

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<120> BIOENGINEERED VEHICLES FOR TARGETED NUCLEIC ACID  
DELIVERY

<130> 23611-A USA

<140> As yet unassigned

<141> 2001-06-25

<150> 60/213,653

<151> 2000-06-23

<160> 51

AB <170> PatentIn Ver. 3.1

<210> 1

<211> 18

<212> PRT

<213> Homo sapiens

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Arg Arg

<210> 2

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<213> Homo sapiens

<400> 2

Ala Lys Lys Ala Lys Ser Pro Lys Lys Ala Lys Ala Ala Lys Pro Lys  
1 5 10 15

Lys Ala Pro Lys Ser Pro Ala Lys Ala Lys  
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<210> 3  
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 <212> PRT  
 <213> Adenovirus

<400> 3  
 Ser Gly Pro Ser Asn Thr Pro Pro Glu Ile  
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<210> 4  
 <211> 9  
 <212> PRT  
 <213> Human papillomavirus

<400> 4  
 Arg Ala His Tyr Asn Ile Val Thr Phe  
       1                  5

<210> 5  
 <211> 10  
 <212> PRT  
 <213> Human papillomavirus

<400> 5  
 Thr Asp Leu Tyr Cys Tyr Glu Gln Leu Asn  
       1                  5                  10

<210> 6  
 <211> 10  
 <212> PRT  
 <213> Human papillomavirus

<400> 6  
 Ala Glu Pro Asp Arg Ala His Tyr Asn Ile  
       1                  5                  10

<210> 7  
 <211> 19

<212> PRT

<213> Human papillomavirus

<400> 7

Lys Cys Asp Ser Thr Leu Arg Leu Cys Val Gln Ser Thr His Val Ile  
 1 5 10 15

Arg Thr Leu

<210> 8

<211> 10

<212> PRT

<213> Human papillomavirus

<400> 8

Gly Thr Leu Gly Ile Val Cys Pro Ile Cys  
 1 5 10

<210> 9

<211> 10

<212> PRT

<213> Epstein-Barr Virus

<400> 9

Asp Thr Pro Leu Ile Pro Leu Thr Ile Phe  
 1 5 10

<210> 10

<211> 15

<212> PRT

<213> Epstein-Barr Virus

<400> 10

Pro Arg Ser Pro Thr Val Phe Tyr Asn Ile Pro Pro Met Pro Leu  
 1 5 10 15

<210> 11

<211> 9

<212> PRT

<213> Epstein-Barr Virus

<400> 11

Phe Leu Arg Gly Arg Ala Tyr Gly Leu

1

5

&lt;210&gt; 12

&lt;211&gt; 15

&lt;212&gt; PRT

&lt;213&gt; Epstein-Barr Virus

&lt;400&gt; 12

Arg Gly Ile Lys Glu His Val Ile Gln Asn Ala Phe Arg Lys Ala

1

5

10

15

&lt;210&gt; 13

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Epstein-Barr Virus

&lt;400&gt; 13

Glu Glu Asn Leu Leu Asp Phe Val Arg Phe

1

5

10

&lt;210&gt; 14

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Epstein-Barr Virus

&lt;400&gt; 14

Ile Val Thr Asp Phe Ser Val Ile Lys

1

5

&lt;210&gt; 15

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 15

Leu Leu Gly Arg Asn Ser Pro Glu Val

1

5

&lt;210&gt; 16

&lt;211&gt; 13

&lt;212&gt; PRT

&lt;213&gt; Murine sarcoma virus

&lt;400&gt; 16

Lys Leu Val Val Val Gly Ala Arg Gly Val Gly Lys Ser  
1 5 10

&lt;210&gt; 17

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 17

Lys Leu Val Val Val Gly Ala Val Gly Val Gly Lys  
1 5 10

&lt;210&gt; 18

&lt;211&gt; 16

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 18

Asp Ile Leu Asp Thr Ala Gly Leu Glu Glu Tyr Ser Ala Met Arg Asp  
1 5 10 15

&lt;210&gt; 19

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 19

Gly Leu Glu Glu Tyr Ser Ala Met  
1 5

&lt;210&gt; 20

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 20

Glu Leu Val Ser Glu Phe Ser Arg Met Ala  
1 5 10

&lt;210&gt; 21

&lt;211&gt; 15

<212> PRT

<213> Homo sapiens

<400> 21

His Leu Asp Met Leu Arg His Leu Tyr Gln Gly Cys Gln Val Val  
 1 5 10 15

<210> 22

<211> 15

<212> PRT

<213> Homo sapiens

<400> 22

Ser Arg Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val  
 1 5 10 15

<210> 23

<211> 9

<212> PRT

<213> Homo sapiens

<400> 23

Glu Ala Asp Pro Thr Gly His Ser Tyr  
 1 5

<210> 24

<211> 10

<212> PRT

<213> Homo sapiens

<400> 24

Leu Leu Asp Gly Thr Ala Thr Leu Arg Leu  
 1 5 10

<210> 25

<211> 9

<212> PRT

<213> Homo sapiens

<400> 25

Tyr Leu Glu Pro Gly Pro Val Thr Ala  
 1 5

<210> 26  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 26  
 Met Leu Leu Ala Val Leu Tyr Cys Leu  
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<210> 27  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 27  
 Tyr Met Asn Gly Thr Met Ser Gln Val  
     1                    5

013  
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 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 28  
 Tyr Met Asn Gly Thr Met Ser Glu Val  
     1                    5

<210> 29  
 <211> 21  
 <212> PRT  
 <213> Homo sapiens

<400> 29  
 Ala Ala Gly Ile Gly Ile Leu Thr Val Ile Leu Gly Val Leu Leu Leu  
     1                    5                    10                    15

Ile Gly Cys Trp Tyr  
                     20

<210> 30  
 <211> 9  
 <212> PRT  
 <213> Simian virus 40

&lt;400&gt; 30

Thr Pro Pro Lys Lys Lys Arg Lys Val  
 1 5

&lt;210&gt; 31

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 31

Lys Lys Ser Ala Lys Lys Thr Pro Lys Lys Ala Lys Lys Pro  
 1 5 10

&lt;210&gt; 32

&lt;211&gt; 26

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 32

Ala Lys Lys Ala Lys Ser Pro Lys Lys Ala Lys Ala Ala Lys Pro Lys  
 1 5 10 15

Lys Ala Pro Lys Ser Pro Ala Lys Ala Lys  
 20 25

&lt;210&gt; 33

&lt;211&gt; 18

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 33

Ser Arg Ser Arg Tyr Tyr Arg Gln Arg Gln Arg Ser Arg Arg Arg Arg  
 1 5 10 15

Arg Arg

&lt;210&gt; 34

&lt;211&gt; 255

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence



&lt;220&gt;

<223> Description of Artificial Sequence: Human/murine  
chimeric single chain binding polypeptide (C6.5  
sFv)

&lt;400&gt; 34

Gln Val Gln Leu Leu Gln Ser Gly Ala Glu Leu Lys Lys Pro Gly Glu  
1 5 10 15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr  
20 25 30

Trp Ile Ala Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Tyr Met  
35 40 45

Gly Leu Ile Tyr Pro Gly Asp Ser Asp Thr Lys Tyr Ser Pro Ser Phe  
50 55 60

Gln Gly Gln Val Thr Ile Ser Val Asp Lys Ser Val Ser Thr Ala Tyr  
65 70 75 80

Leu Gln Trp Ser Ser Leu Lys Pro Ser Asp Ser Ala Val Tyr Phe Cys  
85 90 95

Ala Arg His Asp Val Gly Tyr Cys Ser Ser Ser Asn Cys Ala Lys Trp  
100 105 110

Pro Glu Tyr Phe Gln His Trp Gly Gln Gly Thr Leu Val Thr Val Ser  
115 120 125

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
130 135 140

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
145 150 155 160

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
165 170 175

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
180 185 190

Ile Tyr Gly His Thr Asn Arg Pro Ala Gly Val Pro Asp Arg Phe Ser  
195 200 205

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Phe Arg  
210 215 220

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu  
 225 230 235 240

Ser Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly  
 245 250 255

<210> 35

<211> 765

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Human/murine  
 chimeric single chain binding polypeptide (C6.5  
 sFv)

<400> 35

caggtgcagc tgttgcagtc tggggcagag ttgaaaaaac ccggggagtc tctgaagatc 60  
 tctgttaagg gttctggata cagctttacc agctactgga tcgcctgggt gcgccagatg 120  
 cccgggaaag gcctggagta catggggctc atctatcctg gtgactctga caccaaatac 180  
 agcccgtcct tccaaggcca ggtcaccatc tcagtcgaca agtccgtcag cactgcctac 240  
 ttgcaatgga gcagtctgaa gccctcggac agcgccgtgt atttttgtgc gagacatgac 300  
 gtgggatatt gcagtagttc caactgcgca aagtggcctg aatacttcca gcattggggc 360  
 cagggcaccc tggtcaccgt ctctcaggt ggaggcgggt caggcggagg tggctctggc 420  
 ggtggcggat cgcagtctgt gttgacgcag ccgccctcag tgtctgcggc cccaggacag 480  
 aaggtcacca tctctgctc tggaagcagc tccaacattg ggaataatta tgtatcctgg 540  
 taccagcagc tcccaggaaac agccccaaa ctctcatct atggtcacac caatcggccc 600  
 gcaggggtcc ctgaccgatt ctctggctcc aagtctggca cctcagcctc cctggccatc 660  
 agtgggttcc ggtccgagga tgaggctgat tattactgtg cagcatggga tgacagcctg 720  
 agtggttggg tgttcggcgg agggaccaag ctgaccgtcc taggt 765

<210> 36

<211> 269

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Human/murine  
 chimeric single chain binding polypeptide (C6ML3-9  
 sFv')

<400> 36

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu  
 1 5 10 15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr

	20		25		30										
Trp	Ile	Ala	Trp	Val	Arg	Gln	Met	Pro	Gly	Lys	Gly	Leu	Glu	Tyr	Met
	35						40					45			
Gly	Leu	Ile	Tyr	Pro	Gly	Asp	Ser	Asp	Thr	Lys	Tyr	Ser	Pro	Ser	Phe
	50					55					60				
Gln	Gly	Gln	Val	Thr	Ile	Ser	Val	Asp	Lys	Ser	Val	Ser	Thr	Ala	Tyr
	65				70					75					80
Leu	Gln	Trp	Ser	Ser	Leu	Lys	Pro	Ser	Asp	Ser	Ala	Val	Tyr	Phe	Cys
				85					90					95	
Ala	Arg	His	Asp	Val	Gly	Tyr	Cys	Ser	Ser	Ser	Asn	Cys	Ala	Lys	Trp
			100					105					110		
Pro	Glu	Tyr	Phe	Gln	His	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser
	115						120					125			
Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser
	130					135					140				
Gln	Ser	Val	Leu	Thr	Gln	Pro	Pro	Ser	Val	Ser	Ala	Ala	Pro	Gly	Gln
	145				150					155					160
Lys	Val	Thr	Ile	Ser	Cys	Ser	Gly	Ser	Ser	Ser	Asn	Ile	Gly	Asn	Asn
				165					170					175	
Tyr	Val	Ser	Trp	Tyr	Gln	Gln	Leu	Pro	Gly	Thr	Ala	Pro	Lys	Leu	Leu
			180					185					190		
Ile	Tyr	Asp	His	Thr	Asn	Arg	Pro	Ala	Gly	Val	Pro	Asp	Arg	Phe	Ser
	195						200					205			
Gly	Ser	Lys	Ser	Gly	Thr	Ser	Ala	Ser	Leu	Ala	Ile	Ser	Gly	Phe	Arg
	210					215				220					
Ser	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Ala	Ser	Trp	Asp	Tyr	Thr	Leu
	225				230					235					240
Ser	Gly	Trp	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Gly	Ala
				245					250					255	
Ala	Ala	His	His	His	His	His	His	Gly	Gly	Gly	Gly	Cys			
	260							265							

<210> 37  
 <211> 807  
 <212> DNA  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Human/murine  
 chimeric single chain binding polypeptide (C6ML3-9  
 sFv')

<400> 37

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caggtgcagc tgggtgcagtc tgggggcagag gtgaaaaagc ccgggggagtc tctgaagatc 60
tcctgtaagg gttctggata cagctttacc agctactgga tcgcctgggt gcgccagatg 120
cccgggaaag gcctggagta catggggctc atctatcctg gtgactctga caccaaatac 180
agcccgtcct tccaaggcca ggtcaccatc tcagtcgaca agtccgtcag cactgcctac 240
ttgcaatgga gcagtctgaa gccctcggac agcgccgtgt atttttgtgc gagacatgac 300
gtgggatatt gcagtagttc caactgcgca aagtggcctg aatacttcca gcattggggc 360
cagggcaccc tggtcaccgt ctccctcaggt ggaggcgggt caggcggagg tggctctggc 420
ggtggcggat cgcagtctgt gttgacgcag ccgccctcag tgtctgcggc cccaggacag 480
aaggtcacca tctcctgctc tggaagcagc tccaacattg ggaataatta tgtatcctgg 540
taccagcagc tcccaggaac agcccccaa ctcctcatct atgatcacac caatcggccc 600
gcaggggtcc ctgaccgatt ctctggctcc aagtctggca cctcagcctc cctggccatc 660
agtgggttcc ggtccgagga tgaggctgat tattactgtg cctcctggga ctacaccctc 720
tcgggctggg tgttcggcgg aggaaccaag ctgaccgtcc taggtgcggc cgcacaccat 780
catcaccatc acggtggtgg cggctgc                                     807

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<210> 38  
 <211> 282  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Human/murine  
 chimeric single chain binding polypeptide  
 (C6ML-3-9sFv'-L1-KDEL)

<400> 38

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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
  1           5           10          15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
  20          25          30

Trp Ile Ala Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Tyr Met
  35          40          45

Gly Leu Ile Tyr Pro Gly Asp Ser Asp Thr Lys Tyr Ser Pro Ser Phe

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50                      55                      60  
 Gln Gly Gln Val Thr Ile Ser Val Asp Lys Ser Val Ser Thr Ala Tyr  
 65                      70                      75                      80  
 Leu Gln Trp Ser Ser Leu Lys Pro Ser Asp Ser Ala Val Tyr Phe Cys  
 85                      90                      95  
 Ala Arg His Asp Val Gly Tyr Cys Ser Ser Ser Asn Cys Ala Lys Trp  
 100                      105                      110  
 Pro Glu Tyr Phe Gln His Trp Gly Gln Gly Thr Leu Val Thr Val Ser  
 115                      120                      125  
 Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 130                      135                      140  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 145                      150                      155                      160  
 Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
 165                      170                      175  
 Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 180                      185                      190  
 Ile Tyr Asp His Thr Asn Arg Pro Ala Gly Val Pro Asp Arg Phe Ser  
 195                      200                      205  
 Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Phe Arg  
 210                      215                      220  
 Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ser Trp Asp Tyr Thr Leu  
 225                      230                      235                      240  
 Ser Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ala  
 245                      250                      255  
 Ala Ala His His His His His His Gly Gly Gly Gly Cys Leu Glu Ser  
 260                      265                      270  
 Ser Ser Ser Gly Ser Glu Lys Asp Glu Leu  
 275                      280

<210> 39  
 <211> 846  
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Human/murine  
chimeric single chain binding polypeptide  
(C6ML-3-9sFv'-L1-KDEL)

<400> 39

caggtgcagc tgggtgcagtc tggggcagag gtgaaaaagc ccgggggagtc tctgaagatc 60  
tcctgtaagg gttctggata cagctttacc agctactgga tcgcctgggt gcgccagatg 120  
cccgggaaaag gcctggagta catggggctc atctatcctg gtgactctga caccaaatac 180  
agcccgctcct tccaaggcca ggtcaccatc tcagtcgaca agtccgtcag cactgcctac 240  
ttgcaatgga gcagtctgaa gccctcggac agcgccgtgt atttttgtgc gagacatgac 300  
gtgggatatt gcagtagttc caactgcgca aagtggcctg aatacttcca gcattggggc 360  
cagggcaccc tggtcaccgt ctctcaggt ggaggcgggt caggcgagg tggctctggc 420  
gggtggcggat cgcagtctgt gttgacgcag ccgccctcag tgtctgcggc ccaggacag 480  
aaggtcacca tctcctgctc tgggaagcagc tccaacattg ggaataatta tgtatcctgg 540  
taccagcagc tcccaggaac agccccaaa ctctcatct atgatcacac caatcgccc 600  
gcaggggtcc ctgaccgatt ctctggctcc aagtctggca cctcagcctc cctggccatc 660  
agtgggttcc ggtccgagga tgaggctgat tattactgtg cctcctggga ctacaccctc 720  
tcgggctggg tggtcggcgg aggaaccaag ctgaccgtcc taggtgcggc cgcacaccat 780  
catcaccatc acggtggtgg cggctgcctc gagtctcta gctctggatc cgaaaaagat 840  
gaactg 846

<210> 40

<211> 287

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Human/murine  
chimeric single chain binding polypeptide  
(C6ML3-9sFv'-L2-KDEL)

<400> 40

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu  
1 5 10 15  
Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr  
20 25 30  
Trp Ile Ala Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Tyr Met  
35 40 45  
Gly Leu Ile Tyr Pro Gly Asp Ser Asp Thr Lys Tyr Ser Pro Ser Phe  
50 55 60

Gln Gly Gln Val Thr Ile Ser Val Asp Lys Ser Val Ser Thr Ala Tyr  
 65 70 75 80  
 Leu Gln Trp Ser Ser Leu Lys Pro Ser Asp Ser Ala Val Tyr Phe Cys  
 85 90 95  
 Ala Arg His Asp Val Gly Tyr Cys Ser Ser Ser Asn Cys Ala Lys Trp  
 100 105 110  
 Pro Glu Tyr Phe Gln His Trp Gly Gln Gly Thr Leu Val Thr Val Ser  
 115 120 125  
 Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 130 135 140  
 Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 145 150 155 160  
 Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
 165 170 175  
 Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
 180 185 190  
 Ile Tyr Asp His Thr Asn Arg Pro Ala Gly Val Pro Asp Arg Phe Ser  
 195 200 205  
 Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Phe Arg  
 210 215 220  
 Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ser Trp Asp Tyr Thr Leu  
 225 230 235 240  
 Ser Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ala  
 245 250 255  
 Ala Ala His His His His His His Gly Gly Gly Gly Cys Leu Glu Ser  
 260 265 270  
 Ser Ser Ser Gly Ser Ser Ser Ser Gly Ser Glu Lys Asp Glu Leu  
 275 280 285

&lt;210&gt; 41

&lt;211&gt; 861

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence:Human/murine  
chimeric single chain binding polypeptide  
(C6ML3-9sFv'-L2-KDEL)

&lt;400&gt; 41

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caggtgcagc tgggtgcagtc tggggcagag gtgaaaaagc ccgggggagtc tctgaagatc 60
tcctgtaagg gttctggata cagctttacc agctactgga tcgcctgggt gcgccagatg 120
cccgggaaag gcctggagta catggggctc atctatcctg gtgactctga caccaaatac 180
agcccgtcct tccaaggcca ggtcaccatc tcagtcgaca agtccgtcag cactgcctac 240
ttgcaatgga gcagtctgaa gccctcggac agcgccgtgt atttttgtgc gagacatgac 300
gtgggatatt gcagtagttc caactgcgca aagtggcctg aataactcca gcattggggc 360
cagggcaccc tggtcaccgt ctctcaggt ggaggcgggt caggcggagg tggctctggc 420
ggtggcggat cgcagtctgt gttgacgcag ccgccctcag tgtctgcggc cccaggacag 480
aaggtcacca tctcctgctc tggaagcagc tccaacattg ggaataatta tgtatcctgg 540
taccagcagc tcccaggaac agcccccaaa ctctcatct atgatcacac caatcggccc 600
gcaggggtcc ctgaccgatt ctctggctcc aagtctggca cctcagcctc cctggccatc 660
agtgggttcc ggtccgagga tgaggctgat tattactgtg cctcctggga ctacaccctc 720
tcgggctggg tggtcggcgg aggaaccaag ctgaccgtcc taggtgcggc cgcacaccat 780
catcaccatc acggtggtgg cggctgcctc gagtctagca gctccgggtc ctctagctct 840
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&lt;210&gt; 42

&lt;211&gt; 296

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence:Human/murine  
chimeric single chain binding polypeptide  
(C6ML3-9sFv'-L2-H14)

&lt;400&gt; 42

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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1              5              10              15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
      20              25              30

Trp Ile Ala Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Tyr Met
      35              40              45

Gly Leu Ile Tyr Pro Gly Asp Ser Asp Thr Lys Tyr Ser Pro Ser Phe
      50              55              60

Gln Gly Gln Val Thr Ile Ser Val Asp Lys Ser Val Ser Thr Ala Tyr
      65              70              75              80

```



Leu Gln Trp Ser Ser Leu Lys Pro Ser Asp Ser Ala Val Tyr Phe Cys  
                             85                            90                            95

Ala Arg His Asp Val Gly Tyr Cys Ser Ser Ser Asn Cys Ala Lys Trp  
                             100                            105                            110

Pro Glu Tyr Phe Gln His Trp Gly Gln Gly Thr Leu Val Thr Val Ser  
                             115                            120                            125

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
                             130                            135                            140

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln  
 145                            150                            155                            160

Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn  
                             165                            170                            175

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu  
                             180                            185                            190

Ile Tyr Asp His Thr Asn Arg Pro Ala Gly Val Pro Asp Arg Phe Ser  
                             195                            200                            205

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Phe Arg  
                             210                            215                            220

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ser Trp Asp Tyr Thr Leu  
 225                            230                            235                            240

Ser Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ala  
                             245                            250                            255

Ala Ala His His His His His His Gly Gly Gly Gly Cys Leu Glu Ser  
                             260                            265                            270

Ser Ser Ser Gly Ser Ser Ser Ser Gly Ser Lys Lys Ser Ala Lys Lys  
                             275                            280                            285

Thr Pro Lys Lys Ala Lys Lys Pro  
                             290                            295

&lt;210&gt; 43

&lt;211&gt; 888

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

Q3  
 Cont

&lt;220&gt;

<223> Description of Artificial Sequence:Human/murine  
chimeric single chain binding polypeptide  
(C6ML3-9sFv'-L2-H14)

&lt;400&gt; 43

```

caggtgcagc tgggtgcagtc tggggcagag gtgaaaaagc ccggggagtc tctgaagatc 60
tcctgtaagg gttctggata cagctttacc agctactgga tcgcctgggt gcgccagatg 120
cccgggaaag gcctggagta catggggctc atctatcctg gtgactctga caccaaatac 180
agcccgtcct tccaaggcca ggtcaccatc tcagtcgaca agtccgtcag cactgcctac 240
ttgcaatgga gcagtctgaa gccctcggac agcgccgtgt atttttgtgc gagacatgac 300
gtgggatatt gcagtagttc caactgcgca aagtggcctg aatacttcca gcattggggc 360
cagggcaccc tggtcaccgt ctctcagggt ggaggcgggt caggcggagg tggctctggc 420
ggtggcggat cgcagtctgt gttgacgcag ccgccctcag tgtctgcggc cccaggacag 480
aaggtcacca tctcctgctc tggaagcagc tccaacattg ggaataatta tgtatcctgg 540
taccagcagc tcccaggaac agccccaaa ctctcatct atgatcacac caatcggccc 600
gcaggggtcc ctgaccgatt ctctggctcc aagtctggca cctcagcctc cctggccatc 660
agtgggttcc ggtccgagga tgaggctgat tattactgtg cctcctggga ctacaccctc 720
tcgggctggg tggtcggcgg aggaaccaag ctgaccgtcc taggtgcggc cgcacaccat 780
catcaccatc acggtggtgg cggctgcctc gagtctagca gctccgggtc ctctagctct 840
ggatccaaga aaagcgcgaa aaagaccccg aagaaagcga agaaaccg      888

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&lt;210&gt; 44

&lt;211&gt; 291

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence:Human/murine  
chimeric single chain binding polypeptide  
(C6ML3-9sFv'-L2-nls)

&lt;400&gt; 44

```

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Glu
 1             5             10            15

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Ser Phe Thr Ser Tyr
      20             25            30

Trp Ile Ala Trp Val Arg Gln Met Pro Gly Lys Gly Leu Glu Tyr Met
      35             40            45

Gly Leu Ile Tyr Pro Gly Asp Ser Asp Thr Lys Tyr Ser Pro Ser Phe
      50             55            60

Gln Gly Gln Val Thr Ile Ser Val Asp Lys Ser Val Ser Thr Ala Tyr

```

65		70		75		80									
Leu	Gln	Trp	Ser	Ser	Leu	Lys	Pro	Ser	Asp	Ser	Ala	Val	Tyr	Phe	Cys
			85						90					95	
Ala	Arg	His	Asp	Val	Gly	Tyr	Cys	Ser	Ser	Ser	Asn	Cys	Ala	Lys	Trp
			100					105					110		
Pro	Glu	Tyr	Phe	Gln	His	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser
		115					120					125			
Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser
		130				135					140				
Gln	Ser	Val	Leu	Thr	Gln	Pro	Pro	Ser	Val	Ser	Ala	Ala	Pro	Gly	Gln
145					150					155					160
Lys	Val	Thr	Ile	Ser	Cys	Ser	Gly	Ser	Ser	Ser	Asn	Ile	Gly	Asn	Asn
			165					170						175	
Tyr	Val	Ser	Trp	Tyr	Gln	Gln	Leu	Pro	Gly	Thr	Ala	Pro	Lys	Leu	Leu
		180						185					190		
Ile	Tyr	Asp	His	Thr	Asn	Arg	Pro	Ala	Gly	Val	Pro	Asp	Arg	Phe	Ser
		195					200					205			
Gly	Ser	Lys	Ser	Gly	Thr	Ser	Ala	Ser	Leu	Ala	Ile	Ser	Gly	Phe	Arg
		210				215					220				
Ser	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Ala	Ser	Trp	Asp	Tyr	Thr	Leu
225					230					235					240
Ser	Gly	Trp	Val	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Thr	Val	Leu	Gly	Ala
			245						250					255	
Ala	Ala	His	His	His	His	His	His	Gly	Gly	Gly	Gly	Cys	Leu	Glu	Ser
		260						265					270		
Ser	Ser	Ser	Gly	Ser	Ser	Ser	Ser	Gly	Ser	Thr	Pro	Pro	Lys	Lys	Lys
		275					280					285			
Arg	Lys	Val													
		290													

&lt;210&gt; 45

&lt;211&gt; 873

&lt;212&gt; DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Human/murine  
chimeric single chain binding polypeptide  
(C6ML3-9sFv'-L2-nls)

<400> 45

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caggtgcagc tgggtgcagtc tgggggcagag gtgaaaaagc ccgggggagtc tctgaagatc 60
tcctgtaagg gttctggata cagctttacc agctactgga tcgcctgggt gcgccagatg 120
cccgggaaaag gcctggagta catggggctc atctatcctg gtgactctga caccaaatac 180
agcccgtcct tccaaggcca ggtcaccatc tcagtcgaca agtccgtcag cactgcctac 240
ttgcaatgga gcagtctgaa gccctcggac agcgccgtgt atttttgtgc gagacatgac 300
gtgggatatt gcagtagttc caactgcgca aagtggcctg aatacttcca gcattggggc 360
cagggcaccc tggtcaccgt ctctcaggt ggaggcgggt caggcggagg tggctctggc 420
gggtggcggat cgcagtctgt gttgacgcag ccgccctcag tgtctgcggc cccaggacag 480
aaggtcacca tctcctgctc tggaagcagc tccaacattg ggaataatta tgtatcctgg 540
taccagcagc tcccaggaaac agccccaaa ctctcatct atgatcacac caatcggcc 600
gcaggggtcc ctgaccgatt ctctggctcc aagtctggca cctcagcctc cctggccatc 660
agtgggttcc ggtccgagga tgaggctgat tattactgtg cctcctggga ctacaccctc 720
tcgggctggg tggtcggcgg aggaaccaag ctgaccgtcc taggtgcggc cgcacaccat 780
catcaccatc acggtggtgg cggctgcctc gagtctagca gctccggttc ctctagctct 840
ggatccactc cgccgaaaaa gaaacgtaaa gtg                                     873

```

<210> 46

<211> 5

<212> PRT

<213> artificial sequence

<220>

<223> cysteine-containing effector sequence

<400> 46

Gly Gly Gly Gly Cys  
1 5

<210> 47

<211> 4

<212> PRT

<213> artificial sequence

<220>

<223> endoplasmic reticulum retention signal

<400> 47

Lys Asp Glu Leu  
1

<210> 48  
 <211> 15  
 <212> PRT  
 <213> artificial sequence

<220>  
 <223> linker sequence

<400> 48

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 1 5 10 15

<210> 49  
 <211> 15  
 <212> PRT  
 <213> artificial sequence

<220>  
 <223> linker sequence

<400> 49

Ser Ser Ser Ser Gly Ser Ser Ser Ser Gly Ser Ser Ser Ser Gly  
 1 5 10 15

<210> 50  
 <211> 11  
 <212> PRT  
 <213> artificial

<220>  
 <223> cysteine-containing effector sequence

<400> 50

His His His His His His Gly Gly Gly Gly Cys  
 1 5 10

<210> 51  
 <211> 6  
 <212> PRT  
 <213> artificial sequence

<220>  
 <223> endoplasmic reticulum retention signal

<400> 51

Ser Glu Lys Asp Glu Leu  
 1 5

Q13  
 Canceled